IN THE SPECIFICATION:

Please amend the specification as follows. The paragraph numbers provided are taken from the published application (2003/0158519 A1).

Please amend paragraph [0017] as follows:

[0017] Fig. 1 is an enlarged partial cross-sectional side view of a single channel or lumen injection catheter 100 having a pressure apron 130 in accord with an embodiment of the present invention. In the embodiment of Fig. 1 ~~a~~ a single channel injection tube 110 is enclosed by catheter wall 150 of the catheter 100 and shares a concentric longitudinal axis with the catheter 100. The single channel injection tube 110 in this embodiment has a tapered end terminating in a piercing tip 120. Also labeled in this figure are the internal lumen 140 of the catheter 100 and the tissue-mating surface 160 of the pressure apron 130.

Please amend paragraph [0030] as follows:

[0030] In the present embodiment, as well as in other embodiments, the therapeutic can be a in polymer solution. Moreover, in the dual lumen or channel systems described below the polymer may include alginate, while the plug forming material can be, for example, a plug forming cross-linking agent such as calcium. Additional possible plug forming materials in dual lumen systems can include, but are not limited to, for example, fibrin formed through an enzymatic-catalyzed reaction of ~~Thrombin and Fibrinogen, and Sucrose Acetate Isobutyrate~~ thrombin and fibrinogen, and sucrose acetate isobutyrate formed by the removal of ethanol in an in-vivo aqueous environment thereby precipitating a polymer.

Please amend paragraph [0031] as follows:

[0031] The therapeutic traveling through the injection tube 110 in this embodiment, as well as in the other embodiments, may also include, for example, pharmaceutically active compounds, proteins, cells, oligonucleotides, ribozymes, anti-sense oligonucleotides, DNA compacting agents, gene/vector systems (i.e., any vehicle that allows for the uptake and expression of nucleic acids), nucleic acids (including, for example, recombinant nucleic acids; platelets, dextran, glycosamino glycans, carbohydrates; naked DNA, cDNA, RNA; genomic DNA, cDNA or RNA in a non-infectious vector or in a viral vector and which further may have attached peptide targeting sequences; antisense nucleic acid (RNA or DNA); and DNA chimeras which include gene sequences and encoding for ferry proteins such as membrane translocating sequences ("MTS") and herpes simplex virus-1 ("VP22")), and ~~viral, liposomes~~ viral liposomes and cationic and anionic polymers and neutral polymers that are selected from a number of types depending on the desired application. Non-limiting examples of virus vectors or vectors derived from viral sources include adenoviral vectors, herpes simplex vectors, papilloma vectors, adeno-associated vectors, retroviral vectors, and the like. Non-limiting examples of biologically active solutes include anti-thrombogenic agents such as heparin, heparin derivatives, urokinase, and PPACK (dextrophenylalanine proline arginine chloromethylketone); antioxidants such as probucol and retinoic acid; angiogenic and anti-angiogenic agents and factors; agents blocking smooth muscle cell proliferation such as rapamycin, angiopeptin, and monoclonal antibodies capable of blocking smooth muscle cell proliferation; anti-inflammatory agents such as dexamethasone, prednisolone, corticosterone, budesonide, interleukin-10, serine protease inhibitor, estrogen, sulfasalazine, acetyl salicylic acid, and mesalamine; calcium entry blockers such as verapamil, diltiazem and nifedipine; antineoplastic / antiproliferative / anti-mitotic agents such as paclitaxel, 5-fluorouracil, methotrexate, doxorubicin, daunorubicin, cyclosporine, cisplatin, vinblastine, vincristine, epothilones, endostatin, angiostatin and thymidine kinase inhibitors; antimicrobials such as triclosan, cephalosporins, aminoglycosides, and ~~nitorfurantoin~~ nitrofurantoin; anesthetic agents such as lidocaine, bupivacaine, and ropivacaine; nitric oxide (NO) donors such as ~~lisidomine~~ linsidomine, molsidomine, L-arginine, NO-protein adducts, NO-

carbohydrate adducts, polymeric or oligomeric NO adducts; anti-coagulants such as D-Phe-Pro-Arg chloromethyl ketone, an RGD peptide-containing compound, heparin, antithrombin compounds, platelet receptor antagonists, anti-thrombin antibodies, anti-platelet receptor antibodies, enoxaparin, hirudin, ~~Warafin~~ Warfarin sodium, Dicumarol, aspirin, prostaglandin inhibitors, platelet inhibitors and tick antiplatelet factors; vascular cell growth promotors such as growth factors, growth factor receptor antagonists, transcriptional activators, and translational promotors; vascular cell growth inhibitors such as growth factor inhibitors, growth factor receptor antagonists, transcriptional repressors, translational repressors, replication inhibitors, inhibitory antibodies, antibodies directed against growth factors, bifunctional molecules consisting of a growth factor and a cytotoxin, bifunctional molecules consisting of an antibody and a cytotoxin; cholesterol-lowering agents; vasodilating agents; agents which interfere with endogeneus vascoactive mechanisms; survival genes which protect against cell death, such as anti-apoptotic Bcl-2 family factors and Akt kinase; and combinations thereof. Myoblasts, bone marrow derived stem cells, ~~mesenchymal~~ mesenchymal stem cells, and endothelial progenitor cells may also be used. Moreover, ~~Cells~~ cells can be of human origin (autologous or allogenic) or from an animal source (xenogeneic), genetically engineered if desired to deliver proteins of interest at the injection site. The delivery mediated is formulated as needed to maintain cell function and viability.

Please amend paragraph [0032] as follows

[0032] Polynucleotide sequences useful in practice of the invention include DNA or RNA sequences having a therapeutic effect after being taken up by a cell. Examples of therapeutic polynucleotides include anti-sense DNA and RNA; DNA coding for an anti-sense RNA; or DNA coding for tRNA or rRNA to replace defective or deficient endogenous molecules. The polynucleotides of the invention can also code for therapeutic proteins or polypeptides. A polypeptide is understood to be any translation product of a polynucleotide regardless of size, and whether glycosylated or not. Therapeutic proteins and polypeptides include as a primary

example, those proteins or polypeptides that can compensate for defective or deficient species in an animal, or those that act through toxic effects to limit or remove harmful cells from the body. In addition, the polypeptides or proteins that can be injected, or whose DNA can be incorporated, include without limitation, angiogenic factors and other molecules competent to induce angiogenesis, including acidic and basic fibroblast growth factors, vascular endothelial growth factor, hif-1, epidermal growth factor, transforming growth factor α and β, platelet-derived endothelial growth factor, platelet-derived growth factor, tumor necrosis factor α, hepatocyte growth factor and insulin like growth factor; growth factors; cell cycle inhibitors including CDK inhibitors; anti-restenosis agents, including p15, p16, p18, p19, p21, p27, p53, p57, Rb, nFkB and E2F decoys, thymidine kinase ("TK") and combinations thereof and other agents useful for interfering with cell proliferation, including agents for treating malignancies; and combinations thereof. Still other useful factors, which can be provided as polypeptides or as DNA encoding these polypeptides, include monocyte chemoattractant protein ("MCP-1"), and the family of bone morphogenic proteins ("BMP's"). The known proteins include BMP-2, BMP-3, BMP-4, BMP-5, BMP-6 (Vgr-1), BMP-7 (OP-1), BMP-8, BMP-9, BMP-10, BMP-11, BMP-12, BMP-13, BMP-14, BMP-15, and BMP-16. Currently preferred BMP's are any of BMP-2, BMP-3, BMP-4, BMP-5, BMP-6 and BMP-7. These dimeric proteins can be provided as homodimers, heterodimers, or combinations thereof, alone or together with other molecules. Alternatively or, in addition, molecules capable of inducing an upstream or downstream effect of a BMP can be provided. Such molecules include any of the "hedgehog" proteins, or the ~~DNA's~~ DNAs encoding them.

Please amend paragraph [0035] as follows:

[0035] Figs. 4A ~~through~~ through 4D each show cross-sectional views of a tissue target 400 and a dual channel injection catheter 470 as being employed in accordance with another embodiment of the present invention. These figures show sequential steps beginning with the placement of the catheter 470 against the target tissue, the formation of the in-situ plug 494, and

the release of therapeutic to the surrounding area.

Please amend paragraph [0043] as follows:

[0043] In the present embodiment, as with the others and as suggested above, the therapeutic can be a polymer solution including, for example, alginate, while the plug forming material can be, for example, a plug forming, cross-linking agent such as calcium. Additional possible plug forming materials can include, but are not limited to, for example, fibrin, formed through an enzymatic-catalyzed reaction of ~~Thrombin and Fibrinogen, and Sucrose Acetate Isobutyrate~~ thrombin and fibrinogen, and sucrose acetate isobutyrate formed by the removal of ethanol in an in-vivo aqueous environment thereby precipitating a polymer.

Please amend paragraph [0067] as follows:

1. Cut 2 ~~mandrills~~ mandrels such that they can fit into a 20 mL scintillation vial.

Please amend paragraph [0068] as follows:

2. Use ~~to mandrills~~ 2 mandrels in tandem to break up the agarose cube within a 20 mL vial.

Please amend paragraph [0069] as follows:

3. Leave the ~~mandrills~~ mandrels in the vial and fill with 10 mL PBS.

Please amend paragraph [0072] to create two paragraphs as follows:

[0072] 6. ~~Flourometry~~ Fluorometry is set for 490 nm excitation and 520 nm emission. ~~7. Multiplying the resulting [Dextran] by 10 mL to get the total mass of extracted Dextran.~~

[0072A] 7. Multiplying the resulting [Dextran] by 10 mL to get the total mass of extracted Dextran.

Please amend paragraph [0073] as follows:

[0073] An injection catheter device and a method for delivering a therapeutic that can form into a plug in-situ are provided. Various embodiments of the injection catheter and methods of use thereof are described above including a catheter having a first lumen in fluid communication with a pressure source and a piercing tip, and a pressure apron having a tissue-mating surface for sealably engaging a target tissue and the catheter slidably placed through the pressure apron. It should be appreciated that the above provided embodiments are merely illustrative and other embodiments, modifications, and variations of the present invention are also ~~plausible~~ possible and may be made without departing from the spirit and scope of the present invention.